

half. In the western provinces the precipitation was all snow, which in some localities was a few inches more than the usual quantity and in others a few inches less. In Ontario the precipitation was above the average amount in the Lake Superior region and in the Peninsula of Ontario, and much below again in the eastern portion of the province, Kingston recording a negative departure of 1.5 inches, Ottawa 1.1 inches, and Rockliffe 1.1 inches. In Quebec it was slightly in excess of the average in the eastern portion and deficient elsewhere. In the Maritime Provinces it was everywhere below the average, except in one or two isolated localities, where it was slightly above; the chief positive departures were St. John, 1.6 inches, and Fredericton, 1.3 inches.

At the close of the month the whole Dominion was snow covered, the depth on the ground differing materially with the district. In British

Columbia the amount in many localities was considerable; even coast stations similar to New Westminster report continuous sleighing throughout the month, which is most unusual. In the western Provinces, owing to the long-continued cold weather, the snow which covered the ground at the close of 1906, with the addition of that which fell in January, now amounts to a depth of from 10 to over 30 inches, a marked contrast to the conditions prevailing in January last year, when in some localities the ground was bare of snow and in others it was but lightly covered. In Ontario, in the Lake Superior district, and in far northern localities, the snow on the ground varies from 18 to 24 inches, elsewhere from 3 to 10 inches. In Quebec it varies from 18 to 26 inches in the western portion, to 16 and 48 inches in the eastern portion. In the Maritime Provinces it is from 4 to 11 inches, and very locally 18 inches.

## DESCRIPTION OF TABLES AND CHARTS.

By Mr. P. C. DAY, Assistant Chief, Division of Meteorological Records.

Table I gives the data ordinarily needed for climatological studies for about 152 Weather Bureau stations making simultaneous observations at 8 a. m. and 8 p. m., seventy-fifth meridian time daily, and for about 36 others making only one observation. The altitudes of the instruments above ground are also given.

Table II gives, for about 2800 stations occupied by cooperative observers, the absolute maximum and minimum temperatures of the month, the mean temperature deduced from the average of all the daily maxima and minima, or other readings, as indicated by the numeral following the name of the station, the total monthly precipitation, and the total depth in inches of any snow that may have fallen. When it is possible that there may have been snow of which no record has been made, that fact is indicated by leaders, thus (....).

Table III gives, for all regular stations, the four component directions and the direction resultant of the wind based on the twice-daily observations, taken at 8 a. m. and 8 p. m., respectively, or upon a single observation at a limited number of the less important stations, and without considering the velocity.

Stations taking but a single observation daily are indicated in the table by appropriate references.

The total wind movement for the whole month, for each station, is given in Table I.

Table IV gives a record of precipitation the intensity of which at some period of the storm's continuance equaled or exceeded the following rates:

Duration, minutes .....	5	10	15	20	25	30	35	40	45	50	60
Rates per hour (inches) .....	3.00	1.80	1.40	1.20	1.08	1.00	0.94	0.90	0.87	0.84	0.80

In cases where no storm of sufficient intensity to entitle it to a place in the full table has occurred, the greatest precipitation of any single storm has been given, also the greatest hourly fall during that storm.

Table V gives, for about 30 stations of the Canadian Meteorological Service, the means of pressure and temperature, total precipitation and depth of snowfall, and the respective departures from normal values, except in the case of snowfall.

Table VI gives the heights of rivers referred to zeros of gages. These zeros are arbitrarily fixt, but, as a rule, are set at the plane of lowest water, if possible. The river gages are read once daily (8 a. m., seventy-fifth meridian time), and in times of emergency more frequently. The table shows the highest and lowest of all readings taken, the means of the regular daily readings, and the absolute monthly ranges.

Chart I.—Hydrographs for seven principal rivers of the United States.

Chart II, tracks of centers of high areas, and Chart III, tracks of centers of low areas. The roman numerals show number and chronological order of the centers. The figures within the circles show the days of the month; the letters *a* and *p* indi-

cate, respectively, the observations at 8 a. m. and 8 p. m., seventy-fifth meridian time. Within each circle is also given (Chart II) the highest barometric reading and (Chart III) the lowest reading reported at or near the center at that time, and in both cases as reduced to sea level and standard gravity.

Chart IV.—Total precipitation. The scale of shades showing the depth is given on the chart. Where the monthly amounts are too small to justify shading, and over sections of the country where the stations are too widely separated, or the topography is too diversified to warrant reasonable accuracy in shading, the actual depths are given for a limited number of representative stations. Amounts less than 0.005 inch are indicated by the letter "T," and no precipitation by 0.

Chart V.—Percentage of clear sky between sunrise and sunset. The average cloudiness at each Weather Bureau station is determined by numerous personal observations between sunrise and sunset. The difference between the observed cloudiness and 100 is assumed to represent the percentage of clear sky, and the values thus obtained are the basis of this chart, which does not relate to the nighttime.

Chart VI.—Isobars and isotherms at sea level and surface wind resultants. The pressures have been reduced to sea level and standard gravity by the method described by Prof. Frank H. Bigelow on pages 13–16 of the REVIEW for January, 1902. The pressures have also been reduced to the mean of the twenty-four hours by the application of a suitable correction to the mean of the 8 a. m. and 8 p. m. readings, at stations taking two observations daily, and to the 8 a. m. or 8 p. m. observation, respectively; at stations taking but a single observation. The diurnal corrections so applied will be found in Table 27, Volume II, Annual Report of the Chief of Weather Bureau, 1900–1901, pp. 140–164.

The isotherms on the sea-level plane have been constructed by means of the data summarized in chapter 8 of the Annual Report of the Chief of the Weather Bureau for 1900–1901, Volume II. The correction  $t_0 - t$ , or temperature on the sea-level plane minus the station temperature, as given by Table 48 of the above report, is added to the observed surface temperature to obtain the adopted sea-level temperature.

The surface wind direction resultants are computed from observations at 8 a. m. and 8 p. m. daily, or from observations at but one of those hours at stations taking a single observation only. The duration resultants are shown by figures attached to the arrows.

Chart VII.—Total snowfall. This is based on the reports from regular and cooperative observers, and shows the depth in inches and tenths of the snowfall during the month. In general, the depth is shown by lines inclosing areas of equal snowfall, but in special cases figures are also given.

Chart VIII.—Depth of snow on ground at the end of month, expressed in inches and tenths.



## MONTHLY WEATHER REVIEW.

JANUARY, 1907

TABLE I.—Climatological data for U. S. Weather Bureau stations, January, 1907—Continued.

Stations.	Elevation of instruments.		Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.						Precipitation, in inches.			Wind.			Maximum velocity.														
	Barometer above sea level, feet.	Thermometers above ground.	Actual, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hrs.	Departure from normal.	Mean max. + mean min. + 2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.	Mean wet thermometer.	Mean temperature of the dew-point.	Total.	Departure from normal.	Total movement, miles.	Prevailing direction.	Maximum velocity.											
	Anerometer above ground.	Above ground.	Mean of 24 hours.	Mean of 24 hrs.	Departure from normal.	Mean max. + 2.	Departure from normal.	Mean maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Mean relative humidity, per cent.	Days with .01, or more.	Days with .01, or more.	Miles per hour.	Direction.	Date.	Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness during daylight, tenths.	Total snowfall.								
<i>Up. Lake Reg.—Cont.</i>																																
Grand Rapids.....	707	121	162	29.38	30.18	+ .12	23.7	— 0.1	56	19	30	1	26	18	27	23	21	90	3.74	+ 0.8	22	7,751	nw.	50	19	2	26	8.7	13.1			
Houghton.....	668	63	74	29.39	30.16	+ .11	12.3	— .1	34	3	18	20	20	30	6	24	2	82	2.82	— 0.3	20	5,417	nw.	27	1	25	8	9.36	4			
Marquette.....	734	77	116	29.33	30.17	+ .13	14.2	— 1.8	38	3	20	— 10	21	8	22	13	8	78	1.76	+ 0.3	20	8,075	w.	35	10	4	19	7	7.17	4		
Port Huron.....	638	70	120	29.46	30.18	+ .12	23.6	— 1.8	60	19	30	5	26	17	39	22	20	85	3.06	+ 1.1	17	6,824	w.	58	20	5	19	7	4.10	0		
Sault Ste. Marie.....	614	40	61	29.45	30.19	+ .16	11.4	— 2.9	36	19	18	— 21	23	5	33	11	8	87	2.26	+ 0.5	17	10,662	nw.	60	20	6	20	5	20	7.6	10.9	
Chicago.....	823	140	309	29.27	30.19	+ .09	27.8	+ 4.4	59	7	34	— 3	26	21	31	26	24	86	4.21	+ 2.1	19	10,662	nw.	39	10	6	21	7	3.11	3		
Milwaukee.....	681	122	142	29.43	30.20	+ .12	22.4	+ 3.0	50	19	29	— 9	26	16	34	20	18	85	2.54	+ 0.4	15	8,648	w.	41	20	5	20	7.4	13.8			
Green Bay.....	617	49	86	29.47	30.17	+ .11	15.2	+ 1.0	43	19	22	— 16	23	8	31	14	10	80	2.17	+ 0.3	16	7,571	w.	48	20	5	20	5	6	20	7.4	13.2
Duluth.....	1,183	11	47	28.89	30.20	+ .11	2.7	— 7.3	32	2	12	— 28	28	— 6	35	2	0	88	1.07	+ 0.0	13	10,644	w.	48	20	7	12	12	5.7	13.2		
<i>North Dakota.</i>																												6.0				
Moorehead.....	940	8	57	29.18	30.28	+ .14	2.4	— 1.5	35	2	7	— 28	15	— 12	39	— 3	— 5	90	1.50	+ 0.8	13	7,091	nw.	34	2	8	10	13	5.6	17.4		
Bismarck.....	1,674	8	57	28.35	30.28	+ .15	3.2	— 7.7	25	23	6	— 33	15	— 12	44	— 4	— 8	79	1.01	+ 0.4	10	10,730	nw.	59	19	10	12	5	8.4	7		
Devils Lake.....	1,482	11	44	28.52	30.24	+ .12	10.8	— 12.2	32	2	1	— 37	15	— 21	80	— 11	— 15	80	1.67	+ 0.0	9	9,192	w.	38	10	7	9	15	6.3	17.3		
Williston.....	1,875	14	44	28.09	30.23	+ .12	— 9.0	— 12.9	25	31	2	— 42	15	— 19	40	— 8	— 10	90	1.03	+ 0.4	10	6,427	n.	48	23	7	13	11	6.3	10.3		
<i>Upper Miss. Valley.</i>																												7.5				
Minneapolis.....	102	208	179	29.25	30.21	+ .10	7.4	— 4.5	37	4	15	— 18	26	— 1	35	— 1	— 1	90	0.93	+ 0.1	12	8,594	w.	37	w.	19	7	5	19	6.9	12.8	
St. Paul.....	837	171	179	29.25	30.21	+ .10	7.5	— 3.1	38	5	16	— 20	26	— 1	36	7	4	83	0.81	+ 0.2	11	7,671	nw.	45	19	3	8	20	8.2	7.5		
La Crosse.....	714	71	87	29.39	30.21	+ .10	14.0	— 0.7	42	5	22	— 15	30	6	32	— 1	— 1	90	1.61	+ 0.3	11	5,341	n.	33	19	5	21	7.4	10.9			
Madison.....	974	70	78	29.08	30.20	+ .10	17.0	— 0.5	47	19	24	— 12	26	10	32	18	14	89	1.89	+ 0.2	10	7,042	nw.	38	w.	20	6	4	21	7.5	6.7	
Charles City.....	1,015	8	58	29.08	30.22	+ .08	13.8	— 2.7	39	5	21	— 20	30	6	34	12	9	92	1.13	+ 0.1	8	6,541	nw.	36	nw.	19	8	9	19	7.9	8.4	
Davenport.....	606	71	79	29.51	30.20	+ .08	24.1	+ 4.1	49	19	31	— 5	26	17	33	21	21	86	3.55	+ 1.8	12	5,885	nw.	38	nw.	19	8	9	19	7.2	9.8	
Des Moines.....	861	84	101	29.27	30.22	+ .08	20.4	+ 2.9	48	5	28	— 7	30	12	37	19	17	83	0.87	+ 0.5	9	6,672	nw.	28	nw.	19	2	10	19	8.0	5.3	
Dubuque.....	698	100	117	29.44	30.23	+ .11	19.8	+ 2.5	49	19	27	— 8	26	11	41	17	18	88	1.72	+ 0.0	10	5,405	nw.	26	w.	20	5	7	19	7.1	4.4	
Kokomo.....	614	64	77	29.51	30.22	+ .08	28.9	+ 5.7	63	7	37	— 2	26	21	32	26	23	83	5.07	+ 3.4	12	5,347	nw.	36	nw.	19	4	13	14	6.6	6.9	
Cairo.....	356	87	98	29.81	30.21	+ .05	42.4	+ 8.7	71	18	52	— 10	26	33	33	41	38	85	7.77	+ 4.0	14	7,773	n.	43	w.	19	3	6	22	7.9	5.3	
La Salle.....	536	56	64	29.62	30.22	+ .11	26.2	— 2.3	59	7	33	— 4	26	19	30	— 4	— 4	86	4.46	+ 0.5	15	6,203	nw.	42	w.	20	7	4	20	7.5	8.5	
Hannibal.....	609	11	45	29.51	30.20	+ .08	28.0	— 2.3	65	7	36	— 4	26	21	26	29	26	82	6.17	+ 4.1	15	6,740	nw.	51	w.	19	4	4	21	7.8	2.8	
Springfield, Ill.	644	10	92	29.48	30.19	+ .08	32.2	+ 6.7	70	7	40	— 2	26	24	36	29	26	82	6.17	+ 4.1	15	6,663	n.	40	w.	19	4	7	20	7.6	5.8	
St. Louis.....	536	75	109	29.60	30.20	+ .07	30.9	+ 5.0	71	7	39	— 2	26	23	35	51	17	90	5.17	+ 2.9	14	7,086	nw.	50	s.	19	7	17	12	6.1	11.2	
<i>Missouri Valley.</i>																												7.2				
Columbia, Mo.....	784	11	84	29.30	30.16	+ .03	33.6	+ 3.0	72	6	42	5	26	25	34	8	21	90	0.84	+ 0.2	12	6,488	se.	44	w.	19	5	6	20	7.6	4.5	
Kansas City.....	963	78	95	29.13	30.21	+ .06	31.1	+ 5.7	70	7	39	7	26	23	32	29	26	83	4.54	+ 3.4	13	4,670	nw.	39	19	5	21	7.5	2.5			
Springfield, Mo.....	1,324	98	104	28.71	30.15	+ .01	39.3	+ 7.0	71	7	48	8	26	30	35	36	34	85	6.41	+ 3.9	21	8,104	se.	53	sw.	19	7	31	2.5	1.6		
Iola.....	984	40	47	29.08	30.18	+ .04	35.0	— 1.3	70	7	43	7	27	20	30	— 1	— 1	86	6.11	+ 0.0	18	6,236	ne.	34	nw.	19	4	23	8.2	1.4		
Topeka.....	885	89	84	28.86	30.19	+ .04	21.8	+ 0.3	50	21	30	5	30	14	38	20	15	75	0.61	+ 0.0	9	7,611	n.	48	nw.	19	8	18	7.1	2.0		
Lincoln.....	1,189	11	84	28.86	30.19	+ .04	20.3	+ 1.1	49	2	28	7	30	12	35	19	15	77	0.53	+ 0.2	10	7,055	n.	41	nw.	19	4	6	21	7.9	3.6	
Omaha.....	1,105	115	121	28.97	30.21	+ .06	20.3	+ 1.1	49	21	26	12	32	13	33	15	15	77	0.56	+ 0.2	10	7,381	n.	54	nw.	19	8	16	7.5	5.1		
Valentine.....	2,598	47	54	27.92	30.19	+ .07	14.6	+ 2.3	56	23	27	12	32	3	33	15	11	95	0.36	+ 0.0	5	4,844	w.	49	sw.	19	11	12	8	5.1	4.2	
Sioux City.....	1,135	96	164	29.93	30.22	+ .07	15.0	+ 1.3	41	21	24	14	30	6	39	— 1	— 1	90	0.41	+ 0.2	5	10,374	nw.	66	nw.	19	4	10	7	20	6.4	
Pierre.....	1,572	70	75	28.46	30.25	+ .12	6.0	+ 6.7	41	4	15	— 16	15	9	3	77	0.45	+ 0.0	5	1,626	s.	39	sw.	19	5	15	6	2	23			
Huron.....	1,306	56	67	27.86	30.26	+ .10	4.2	+ 2.8	47	3	12	— 21	15	6	3	12	1	86	1.22	+ 0.7	11	7,086	nw.	50	s.	19	2	7	12	6	1.1	
North Platte.....	2,821	11	51	27.11	30.19	+ .07	12.8	+ 1.4	46																							

TABLE I.—Climatological data for U. S. Weather Bureau stations, January, 1907—Continued.

Stations.	Elevation of instruments.		Pressure, in inches.		Temperature of the air, in degrees Fahrenheit.						Precipitation, in inches.		Wind.		Maximum velocity.																	
	Barometer above sea level, feet.	Thermometers above ground.	Actual, reduced to mean of 24 hours.	Departure from normal.	Mean max. + mean min. + 2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Greatest daily range.	Mean wet thermometer.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Total.	Departure from normal.	Days with 01, or more.	Total movement, miles.	Prevailing direction.	Miles per hour.	Date.	Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness during daylight, tenths.	Total snowfall.					
	Anerometer above ground.		Sea level, reduced to mean of 24 hrs.																													
<i>Mid. Pac. Coast Reg.</i>																																
Eureka.....	62	62	80	29.93	30.00	— .10	45.7	+ 1.3	46.4	+ 0.4	60	29	52	33	14	41	19	44	41	84	6.21	+ 0.8	24	4,631	s.	36	n.	12	3	20	7.3	
Mount Tamalpais.....	2,375	11	18	27.51	30.02	— .09	39.4		58	22	42	28	15	36	38	21	32	21	14,158	56	s. se.	56	4	20	16	26	7.9					
Point Reyes Light.....	490	7	18	29.46	29.98	— .09	47.5	+ 1.1	67	22	52	34	15	44	18	36	28	40	38	85	6.28	+ 0.6	25	15,184	a.	66	s. sw.	16	4	3	26	8.8
Red Bluff.....	332	50	56	29.66	30.08	— .09	42.3	+ 2.6	62	22	48	27	18	36	28	40	38	85	6.10	+ 0.8	15	4,085	nw.	30	s. se.	4	20	16	26	8.9		
Sacramento.....	69	106	117	29.97	30.05	— .07	45.3	+ 0.3	61	29	50	31	6	40	21	43	40	38	4.63	+ 0.8	17	6,319	se.	40	s.	17	7	5	19	7.0		
San Francisco.....	155	200	204	29.87	30.04	— .07	47.1	+ 3.0	61	22	51	36	13	43	16	44	42	32	4.41	+ 0.3	21	5,931	s.	32	s. se.	8	20	7.2				
San Jose.....	141	73	88	29.89	30.05	— .05	46.6		64	28	54	28	6	39	30	41	39	30	4.61	+ 0.3	19	5,931	s.	6	s.	21	6.9					
Santheast Farallon.....	30	9	17	29.99	30.02	— .05	49.0		59	22	52	38	15	46	11	—	—	—	4.48	+ 0.3	21	11,913	s.	58	s.	16	7	7	17	6.8		
<i>S. Pac. Coast Reg.</i>																																
Fresno.....	330	67	70	29.70	30.06	— .04	46.6	+ 2.1	65	31	54	30	21	39	29	44	40	38	8.34	+ 2.0	14	3,178	se.	24	se.	7	8	1	22	7.4		
Los Angeles.....	338	116	123	29.69	30.06	— .02	51.6	+ 1.5	62	22	59	35	2	44	42	28	46	41	72	7.02	+ 4.1	16	3,473	ne.	23	s.	7	4	13	14	6.7	
San Diego.....	87	94	102	29.96	30.06	— .01	52.8	+ 0.8	73	21	59	35	2	46	23	48	45	78	3.27	+ 1.2	18	4,320	nw.	33	nw.	1	14	3	14	5.3		
San Luis Obispo.....	201	47	54	29.85	30.07	— .02	49.0	+ 2.1	74	22	57	30	6	41	37	46	44	85	8.78	+ 4.1	16	3,519	nw.	24	se.	8	9	2	20	6.4		
<i>West Indies.</i>																																
Grand Turk.....	11	6	20	30.11	30.12	+ .09	74.2		84	28	81	62	24	68	..	..	2.77	..	20	e.	..	..	..	..	..	..	..	..				
San Juan.....	82	48	90	29.98	30.06	+ .04	73.4	+ 1.8	80	10	78	63	30	69	13	67	64	73	3.64	+ 0.7	22	10,512	ne.	32	ne.	1	13	16	2	3.8		
Ancon.....	74																															
Naos.....	40																															

TABLE II.—Climatological record of cooperative observers, January, 1907.

Stations.	Temperature, (Fahrenheit.)			Precipitation.			Stations.	Temperature, (Fahrenheit.)			Precipitation.			Stations.	Temperature, (Fahrenheit.)			Precipitation.		
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.			Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.			Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.	
<i>Alabama.</i>	o	o	o	In. s.	In. s.		Allaire Ranch.....	o	o	o	In. s.	In. s.		Arizona—Cont'd.	o	o	o	In. s.	In. s.	
Alaga.....	75	20	50.9	1.18	1.91		Aztec.....	78	28	53.8	2.52	1.34		Upper San Pedro.....	73	22	47.6	2.75	7.5	
Ashville.....	74	25	55.2	2.14	2.20		Benson.....	72	22	47.8	2.56	2.56		Vail #6.....	60	38	45.9	2.01	4.0	
Auburn.....	79	26	57.2	2.20	2.20		Bisbee.....	64	22	45.7	5.36	6.0		Walnut Grove.....	69	20	43.4	2.82	7.0	
Bermuda.....	80	23	57.2	2.07	2.07		Bonita.....	—	—	—	4.48	14.0		Wilcox.....	69	20	43.4	3.72	8.5	
Bolegee.....							Bowie.....	72	22	47.0	3.53	10.0		Yarnell.....	68	0	37.8	2.35	10.0	
Bridgeport.....							Buckeye.....	76	25	50.2	1.06	T.		Arizona—Arkansas.						
Campbell.....							Chiarson's Mill.....	47	7	24.5	6.05	44.0		Alicia.....	78	12	47.4	6.57	3.6	
Cedar Bluff.....							Clifton.....	—	—	—	2.65	3.0		Amity.....	78	21	52.2	8.66	T.	
Citronelle.....	80	27	60.4	2.47	2.47		Cline.....	71	26	48.1	3.08	3.0		Arkadelphia.....	78	20	51.7	7.58	T.	
Clanton.....	79	20	54.2	2.06	2.06		Cochise #1.....	60	25	43.6	2.93	0.7		Arkansas City.....	78	9	47.8	2.38		
Cordova.....	80	20	53.4	2.75	2.75		Clifton.....	70	27	47.0	2.05	1.0		Batesville.....	78	9	47.8	3.35	1.0	
Daphne.....	81	32	61.4	2.65	2.65		Columbia.....	68	28	47.0	2.77	7.0		Beebranch.....	78	21	52.2	7.97	2.0	
Decatur.....	79	17	51.2	1.04	1.04		Congress.....	76	27	50.2	2.68	2.4		Black Rock.....	78	21	52.2	5.69	0.5	
Demopolis.....							Dudleyville.....	76	27	50.2	3.47	44.0		Brinkley.....	79	19	50.1	4.54	0.5	
Eufaula.....	74	26	54.4	1.89	1.89		Flagstaff.....	53	0	27.0	3.47	44.0		Calico Rock.....	78	20	51.7	4.54	2.0	
Flamont.....	80	27	57.9	2.30	2.30		Fort Apache.....	66	6	40.1	2.15	10.0		Camden.....	77	23	55.0	5.98		
Florence.....	78	16	52.8	3.24	3.24		Fort Huachuca.....	66	22	45.3	4.80	1.0		Center Point.....	78	20	53.8	6.15		
Fort Deposit.....	77	24	53.7	2.72	2.72		Gredonia.....	53	7	34.9	1.60	10.0		Clarendon.....	78	20	43.8	6.37	0.5	
Gadsden.....	80	21	53.0	1.50	1.50		Gilabend.....	74	30	54.3	1.83	2.0		Conway.....	77	15	49.8	8.41	0.5	
Goodwater.....	80	21	53.8	2.55	2.55		Globe.....	67	18	45.6	2.46	7.0		Corning.....	74	7	46.2	8.29	2.3	
Greensboro.....	77	23	55.8	2.37	2.37		Grand Canyon.....	55	4	29.6	3.30	29.0		Dardenelle.....	78	8	45.5	4.88	0.5	
Guntersville.....							Greaterville.....	71	11	41.3	4.14	4.0		Des Arc.....	79	19	50.6	10.03	0.5	
Hamilton.....	78	20	52.4	1.77	1.77		Mohawk Summit*.....	75	40	55.8	0.40	T.		Dodd City.....	75	—	45.4	4.39	1.8	
Highland Home.....	78	24	57.8	1.75	1.75		Natural Bridge.....	—	—	—	4.27	19.0		Hardy.....	76	8	46.3	7.29	1.1	
Livingston.....	75	21	52.9	3.54	3.54		Nutrioso.....	—	—	—	1.58	15.5		Harrison.....	75	—	43.6*	4.23	1.5	
Lock No. 4.....	76	21	52.2	2.54	2.54		Oracle.....	64	25	45.9	3.11	11.0		Helena.....	76	23	53.2	2.24	1.0	
Lucy.....	81	27	58.7	1.12	1.12		Pearl.....	68	11	43.4	3.01	8.0		Hope.....	79	22	54.4	8.63		
Mapiegrove.....	77	20	49.6	2.44	2.44		Parker.....	77	21	51.1	0.13	T.		Hot Springs.....	75	18	50.4	10.01		
Milstead.....							Phoenix (Ex. Farm).....	75	27	50.7	1.56			Jonesboro.....	76	9	48.0	8.06	0.2	
Newbern.....	80	22	51.8	2.35	2.35		Picacho #6.....	70	35	55.0	1.02			Junction.....	77	22	54.2	2.88		
Oneonta.....	76	17	51.4	2.13	2.13		Pinal Ranch.....	—	—	—	3.39	9.5		La Crosse.....	76	7	47.4	4.69	1.0	
Opelika.....	80	22	55.																	





TABLE II.—Climatological record of cooperative observers—Continued.

Stations.	Temperature, (Fahrenheit.)			Precipita- tion.		Stations.	Temperature, (Fahrenheit.)			Precipita- tion.		Stations.	Temperature, (Fahrenheit.)			Precipita- tion.	
	Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.		Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.		Maximum.	Minimum.	Mean.	Rain and melted snow.	Total depth of snow.
<i>Indian Territory—Cont'd.</i>	°	°	°	Ins.	Ins.	<i>Iowa—Cont'd.</i>	°	°	°	Ins.	Ins.	<i>Kansas—Cont'd.</i>	°	°	°	Ins.	Ins.
Fort Gibson.....	76	17	48.0	3.47	0.7	Ottumwa.....	61	— 4	24.2	3.10	10.8	Osage City .....	69 <sup>a</sup>	5 <sup>b</sup>	31.8 <sup>c</sup>	2.87	2.5
Hartshorn.....	78	16	49.0	3.90	T.	Pacific Junction.....	52	— 5	21.6	0.52	3.7	Oswego.....	72	10	39.3	3.37	T.
Healdton.....	78	17	44.2	4.58	T.	Pella.....	57	— 6	23.1	2.46	7.8	Ottawa.....	73	5	32.2	2.95	4.5
Holdenville.....	78	17	45.0	2.20		Perry.....	44	— 12	19.8	1.18	6.8	Paola.....	71	5	33.2	5.26	3.0
Marlow.....	73	12	45.0	2.20		Plover.....	41	— 18	14.0	0.50	5.0	Philipsburg.....	56	1	25.4	0.36	1.0
Muskogee.....	74	12	44.6	2.82	1.0	Pocahontas.....	41	— 16	15.6	0.55	5.4	Pleasanton.....	69	9	35.4	6.64	1.5
Okmulgee.....	74	15	44.4	2.57	T.	Ridgeway.....	45	— 18	14.5	2.78	9.8	Pratt.....	63	8	32.2	1.38	0.5
Pauls Valley.....	77	15	47.2	3.80		Rock Rapids.....	40	— 16	8.0	0.40	4.0	Republic.....	52	0	24.8	0.75	1.0
Ravia.....	76	19	49.4	1.64		Rockwell.....	42	— 15	17.8	0.30	3.0	Rome.....	72	10	36.6	4.67	T.
Tulsa.....	76	16	41.6	3.29	T.	St. Charles.....	56	— 6	22.6	1.87	4.5	Russell.....	53	3	27.3	1.05	0.6
Wagoner.....	75	10	43.8	2.93	0.5	Sheldon.....	41	— 21	12.2	0.83	7.0	Salina.....	55	6	28.7	1.61	T.
Webbers Falls.....	79 <sup>d</sup>	12	46.0	3.80	0.5	Sibley.....	39	— 16	9.4	0.67	4.8	Scott.....	64	2	30.6	0.21	0.5
<i>Iowa.</i>						Sigourney.....	48	— 7	24.0	1.89	13.2	Toronto.....	75	0	36.0	7.05	1.0
Afton.....	45	— 6	20.8	1.25	5.0	Sioux Center.....	38	— 18	12.8	0.55	5.5	Ulysses.....				0.50	
Albia.....	50	— 8	21.4	2.19	9.5	Stockport.....	54	— 4	25.8	3.80	11.5	Valley Falls.....	60	3	29.2	4.09	2.0
Algona.....	39	— 19	13.5	0.69	7.3	Storm Lake.....	40	— 21	13.6	0.89	9.0	Wakeeney.....	60	1	27.2	0.34	3.0
Allerton.....	50	— 4	24.4	2.79	9.9	Stuart.....	45	— 11	20.2	0.58		Wakeeney (near).....	70	1	29.0	0.19	2.8
Alta.....	40	— 16	13.6	0.61	4.8	Thurman.....	57	— 5	22.6	0.78	3.7	Wallace.....	71	3	37.0	6.34	T.
Alton.....	40	— 16	14.8	0.35	3.5	Toledo.....	44	— 9	19.8	1.17	4.8	Winfield.....	70	10	36.8	4.67	T.
Amana.....	46	— 6	21.7	2.68	7.4	Wapello.....	46	— 2	25.3	3.95	14.5	Yates Center.....	73	— 1	36.2	7.16	1.0
Ames.....	47	— 13	19.0	0.79	4.0	Washington.....	50	— 7	22.9	3.29	8.7	<i>Kentucky.</i>					
Atlantic.....	50	— 7	21.3	0.10	1.0	Washta.....	44	— 20	15.6	0.53	3.2	Alpha.....	72	13	49.8	3.00	3.0
Audubon.....	44	— 12	19.8	0.88	2.3	Waterloo.....	43	— 14	17.8	1.43	5.0	Anchorage.....	72	— 7	40.6	10.60	6.0
Baxter.....	48	— 12	19.6	1.07	5.5	Waukeee.....	43	— 9	20.2	1.77	8.2	Bardstown.....	73	— 3	42.4	9.40	7.0
Bedford.....	49	— 8	22.6	1.46	5.7	Waverly.....	38	— 16	17.1	1.43	6.1	Beattyville.....	74	5	43.2	6.40	1.0
Belleplaine.....	44	— 9	20.3	2.67	9.5	Webster City.....	42	— 16	18.7	0.76	4.0	Beaver Dam.....	73	— 8	41.6	8.83	6.5
Bloomfield.....	51	— 1	25.1	3.56	9.7	Westend.....	40	— 17	14.2	0.62	4.3	Berea.....	71	— 4	44.7	7.48	3.2
Bonaparte.....	57	— 4	25.8	4.88	12.5	Whitten.....	41	— 15	17.7	1.65	2.0	Blandville.....	70	4	43.0	11.13	5.5
Britt.....	40	— 20	13.9	0.75	6.3	Wilton Junction.....	45	— 7	24.1	2.75	0.5	Bowling Green.....	75	1	45.8	5.77	8.2
Buckingham.....				0.85		Winterset.....	44	— 7	21.8	1.68	7.0	Burnside.....	74	6	46.8	3.46	0.5
Burlington.....	56	— 3	25.8	5.30	12.0	Woodburn.....	50	— 7	23.4	1.18	6.0	Cadiz.....	74	3	46.2	7.90	4.5
Carroll.....	45	— 15	16.0	0.39	1.0	Zearing.....	48	— 11	12.8	0.70	3.0	Calhoun.....	73	3	44.2	10.79	6.0
Cedar Rapids.....	49	— 7	19.4	2.57	5.6	<i>Kansas.</i>						Cattettsburg.....	70 <sup>e</sup>	3 <sup>f</sup>	40.2 <sup>g</sup>	6.78	1.0
Chariton.....	50	— 6	23.0	2.52	7.0	Abilene.....						Earlington.....	73	3	41.4	9.88	4.0
Clarinda.....	53	— 3	22.2	1.00	4.6	Alton.....	51	— 4	25.0	1.17	2.5	Edmonton.....	72	— 2	44.9	5.90	4.2
Clearlake.....	40	— 20	14.6	0.81	6.2	Anthony.....						Falmouth.....	70	— 5	42.8	7.75	5.0
Clinton.....	48	— 5	24.4	3.76	8.6	Atchison.....	56	— 4	29.0	3.24	T.	Farmers.....	73	— 1	42.8	9.20	4.0
College Springs.....	51	— 5	24.0	0.84	4.1	Baker.....	57	— 2	27.5	1.59	3.0	Frankfort.....	71	— 1	42.6	10.37	5.8
Columbus Junction.....	47	— 5	25.2	3.45	15.5	Beloit.....						Franklin.....	75	2	46.3	3.52	5.0
Corning.....	45	— 5	21.9	1.57	4.3	Blue Rapids.....						Greensburg.....	82	— 6	43.0	5.68	6.8
Corydon.....	50	— 5	24.5	2.21	9.3	Burlington.....	73	3	35.0	4.78	2.0	High Bridge.....				7.50	
Creston.....	49	— 6	20.4	1.71	6.0	Chapman.....	57	6	29.9	1.95	T.	Hopkinsville.....	75	1	45.0	5.70	8.0
Cumberland.....				0.73	3.0	Cimarron.....	65	6	31.9	0.30		Irvington.....	72	1	43.0	10.37	6.0
Decorah.....	14	— 16	14.8	1.47	10.0	Clay Center.....	53	4	27.2	1.60	T.	Jackson.....	72	12	46.4	5.44	0.5
Delaware.....	44	— 12	18.0	1.51	2.7	Colby.....	64	1	26.2	0.13	0.7	Leitchfield.....	72	— 3	42.6	9.02	8.0
Denison.....	45	— 13	18.8	0.12	1.2	Coldwater.....	68	10	34.5	1.04	T.	Loretto.....	83	— 10	45.7	10.64	7.0
Desoto.....	50	— 10	20.7	0.52	2.5	Columbus.....	72	10	39.3	3.73	0.1	Lynnville.....	76	5	46.6	7.76	6.0
Dows.....	43	— 18	15.8	0.84	3.2	Coolidge.....	70	5	30.8	0.05	0.5	Manchester.....	74	1	44.6	3.36	1.0
Earlham.....	48	— 9	20.2	1.49	6.5	Cottonwood Falls.....	66	2	31.4	3.06	4.7	Marion.....	70	3	43.6	12.48	3.0
Elkader.....	46	— 17	18.3	1.67	6.5	Cunningham.....	64	9	33.0	1.85	T.	Maysville.....	73	— 4	39.0	7.35	8.0
Elliott.....	49	— 7	21.6	0.29	2.5	Dresden.....	61	1	26.8	0.16	1.0	Middlesboro.....	74	— 6	47.4	2.83	4.0
Estherville.....	40	— 19	10.8	0.72	8.0	Eldorado.....	70	1	35.0	3.62	1.0	Mount Sterling.....	69	— 3	41.4	10.65	8.0
Fayette.....	43	— 13	16.4	2.06	5.0	Ellinwood.....	52	6	29.4	1.15	2.4	Owensboro.....	73	7	41.2	12.73	3.0
Forest City.....	40	— 22	11.8	0.95	7.5	Emporia.....	69	6	31.8	2.99	3.0	Owenton.....	68	— 1	39.7	10.25	6.5
Fort Dodge.....	43	— 15	15.6	0.70	3.5	Englewood.....	68	13	36.7	1.01	T.	Paducah.....	72	8	44.8	10.87	4.0
Fort Madison.....				4.02	9.5	Enterprise.....	56	5	29.6	1.47	T.	Princeton.....	72	— 2	46.1 <sup>c</sup>	9.98	4.1
Galva.....	42	— 17	15.4	0.32	3.2	Eskridge.....	64	6	29.3	3.06		Richmond.....	73	— 2	43.2	5.66	4.0
Gilman.....				1.96		Eureka.....						St. John.....	71	— 2	40.3	10.34	10.0
Grand Meadow.....	44	— 15	15.8	1.74	6.7	Fall River.....	73	3	37.0	6.43	2.0	Scott.....	76	— 1	38.1	9.45	2.5
Grinnell (near).....	47	— 11	19.4	2.40	8.0	Farnsworth.....	62	— 2	28.6	0.31	1.0	Shelby City.....	70	— 6	42.0	6.93	8.0
Grundy Center.....	44	— 13	19.3	0.70	2.0	Fort Scott.....	72	5	36.8	5.29	0.7	Shelbyville.....	72	— 8	39.6	9.84	6.0
Guthrie Center.....	45	— 13	20.2	0.48	2.3	Frankfort.....	57	3	27.4	1.04	1.5	Taylorville.....	71	— 7	41.8	11.31	6.0
Hampton.....	46	— 16	15.0	1.63	5.5	Harrison.....	55	— 1	23.4	0.72	1.2	Williamsburg.....	75	— 11	46.2	1.62	1.1
Hancock.....	— 8	21	2.4	0.18	2.0	Hays.....	56	— 1	27.4	0.64	0.8	Williamstown.....	69	— 3	38.2	7.39	6.2
Harlan.....	47	— 11	19.6	0.60	1.8	Horton.....	57	1	26.6	1.83	2.0	<i>Louisiana.</i>					
Humbolt.....	42 <sup>d</sup>	— 18 <sup>e</sup>	17.7 <sup>e</sup>	0.16	4.0	Hugoton.....	75	9	35.4	0.75	T.	Abbeville.....	80	31	63.1	1.70	
Independence.....				0.52	4.0	Hutchinson.....	65	8	32.3	1.57	0.8	Alexandria.....	84	29	60.3	0.91	
Indianola.....	48	— 6	21.4	2.01	6.5	Independence.....	75	12	38.8	3.78	T.	Amite.....	81	28	60.3	1.88	
Inwood.....	41	— 22	11.6	0.79	6.2	Jetmore.....	65	3	32.2	0.49	1.0	Baton Rouge.....	84	31	62.8	2.11	
Iowa City.....	49	— 8	20.8	2.12	8.5	Jewell.....	65	1	25.6	1.18	3.0	Burnside.....	81	31	62.7	1.49</td	



















TABLE IV.—Accumulated amounts of precipitation for each 5 minutes, etc.—Continued.

Stations.	Date.	Total duration.		Total amount of precipitation.	Excessive rate.		Amount before excessive began.	Depths of precipitation (in inches) during periods of time indicated.													
		From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
Pittsburg, Pa.	12	2	3	4	5	6	7													*	
Portland, Me.	19			0.97																0.11	
Portland, Oreg.	2-4			0.38																0.25	
Pueblo, Colo.	28			3.43																*	
Raleigh, N. C.	25-26			0.13																0.48	
Richmond, Va.	26			0.76																0.26	
Rochester, N. Y.	3-4			0.38																0.10	
Sacramento, Cal.	31			1.04																*	
St. Louis, Mo.	19			0.47																0.17	
St. Paul, Minn.	28-29			0.96																0.43	
Salt Lake City, Utah	18			0.24																0.07	
San Antonio, Tex.	24			0.32																*	
San Diego, Cal.	9-10			0.24																0.19	
Sandusky, Ohio	3-4			0.84																0.39	
San Francisco, Cal.	4			1.23																*	
Savannah, Ga.	25-26			0.59																0.29	
Soratton, Pa.	8			0.38																0.38	
Seattle, Wash.	2-3			0.56																0.39	
Shreveport, La.	1			1.20																0.27	
Spokane, Wash.	2-3			0.60																0.29	
Springfield, Ill.	18	1:14 p.m.	10:00 p.m.	1.11																*	
Springfield, Mo.	8-9			1.72	7:23 p.m.	7:35 p.m.	0.88	0.16	0.20	0.37										*	
Syracuse, N. Y.	3-4			1.74																*	
Tampa, Fla.	25			0.97																0.26	
Taylor, Tex.	19			0.45																0.13	
Thomasville, Ga.	20			0.13																0.27	
Toledo, Ohio	2-4			0.31																*	
Topeka, Kans.	18-19			1.32																*	
Valentine, Nebr.	1			1.38																*	
Vicksburg, Miss.	3	3:15 p.m.	7:20 p.m.	0.16	0.63	3:26 p.m.	3:41 p.m.	0.04	0.09	0.28	0.47									0.25	
Washington, D. C.	4			0.25																0.25	
Wichita, Kans.	18-19	9:40 p.m.	D. N. 19th.	0.82	1.51	10:04 p.m.	10:33 p.m.	0.05	0.17	0.29	0.40	0.60	0.69	0.76						0.28	
Wilmington, N. C.	26			0.18																*	
Wytheville, Va.	4			0.39															0.12		
Yankton, S. Dak.	27-29			1.05																0.46	
San Juan, Porto Rico	20																				

\* Self-register not working.

† Of February.

TABLE V.—Data furnished by the Canadian Meteorological Service, January, 1907.

Stations.	Pressure, in inches.			Temperature.			Precipitation.			Stations.	Pressure, in inches.			Temperature.			Precipitation.			
	Actual, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean.	Departure from normal.	Mean maximum.	Total.	Departure from normal.	Total snowfall.		Actual, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean.	Departure from normal.	Mean maximum.	Total.	Departure from normal.	Total snowfall.	
St. Johns, N. F.	Ins.	Ins.	Ins.	o	o	o	Ins.	Ins.	Ins.	Parry Sound, Ont.	29.44	30.19	+1.18	14.1	+0.3	22.9	5.3	3.34	-0.74	22.5
Sydney, C. B. I.	29.80	29.95	+.09	23.2	—0.6	31.0	5.49	—0.42	12.6	Port Arthur, Ont.	29.44	30.21	+1.14	2.4	—0.7	11.3	6.6	1.03	+0.21	10.3
Halifax, N. S.	30.06	30.10	+.17	20.9	+0.4	31.6	5.06	—0.04	28.2	Winnipeg, Man.	29.35	30.27	+1.16	—11.4	—4.6	—1.1	—21.6	2.12	+1.24	21.2
Grand Manan, N. B.	30.04	30.15	+.18	21.7	—0.1	30.9	6.18	+0.41	25.0	Minnedosa, Man.	28.25	30.22	+1.12	—11.0	—3.8	—1.3	—20.6	1.23	+0.43	12.3
Yarmouth, N. S.	30.07	30.13	+.14	21.2	—2.2	30.4	4.52	—0.39	28.5	Qu'Appelle, Sask.	27.77	30.22	+1.14	—12.1	—8.3	—2.4	—21.9	0.28	—0.22	2.8
Charlottetown, P. E. I.	30.07	30.11	+.15	15.4	—1.6	23.8	7.1	—0.63	20.6	Medicine Hat, Alberta.	27.76	30.22	+1.15	—8.1	—13.6	1.0	—17.2	0.75	+0.18	7.5
Chatham, N. B.	30.09	30.12	+.15	9.2	—0.6	20.6	2.2	—2.2	25.2	Swift Current, Sask.	27.46	30.26	+1.17	—8.6	—11.7	0.4	—17.6	1.02	+0.38	10.2
Father Point, Que.	30.12	30.15	+.17	5.6	—2.4	14.2	3.02	—0.83	19.6	Calgary, Alberta.	26.39	30.24	+2.1	—6.3	—14.7	3.0	—15.5	0.40	—0.13	4.0
Quebec, Que.	29.84	30.19	+.17	6.8	—2.8	14.0	1.5	—2.68	23.4	Banff, Alberta.	25.27	30.21	+2.1	—4.2	—16.3	7.4	—15.9	1.64	+0.45	16.4
Montreal, Que.	29.98	30.21	+.17	10.7	—1.0	18.0	3.3	—3.3	23.0	Edmonton, Alberta.	27.76	30.26	+2.23	—12.3	—14.1	—1.3	—23.3	1.04	+0.36	10.4
Rocklife, Ont.	29.57	30.22	+.20	3.8	—2.6	15.8	8.2	—2.14	10.4	Prince Albert, Sask.										
Ottawa, Ont.	29.84	30.19	+.16	10.6	+1.0	18.4	2.9	1.89	14.5	Battleford, Sask.	28.36	30.27	+1.19	—17.7	—11.8	—8.3	—27.1	0.13	—0.27	1.3
Kingston, Ont.	29.89	30.23	+.18	16.4	—0.7	23.8	8.9	1.96	6.7	Kamloops, B. C.	28.92	30.22	+2.26	3.7	—19.3	11.8	—4.5	1.10	+0.28	11.0
Toronto, Ont.	29.79	30.19	+.14	22.1	+3.7	28.6	15.7	4.12	18.0	Victoria, B. C.	29.88	29.98	+.61	33.3	—5.2	37.6	28.9	3.13	—2.26	4.9
White River, Ont.	28.70	30.11	+.10	4.2	—3.8	9.3	—17.7	2.26	22.6	Barkerville, B. C.										
Port Stanley, Ont.	29.52	30.19	+.12	23.5	+1.3	30.7	16.3	4.39	17.4	Hamilton, Bermuda.	30.09	30.26	+1.13	64.5	+2.5	69.1	60.0	1.48	—3.46	
Saugeen, Ont.	29.43	30.17	+.14	21.6	+1.2	28.8	14.3	3.70	—0.35	Dawson, Yukon										

TABLE VI.—Heights of rivers referred to zeros of gages, January, 1907.

Stations.	Distance to mouth of river.	Flood stage on gage.	Highest water.		Lowest water.		Stations.	Distance to mouth of river.	Flood stage on gage.	Highest water.		Lowest water.		Stations.		
			Height.	Date.	Height.	Date.				Height.	Date.	Height.	Date.			
Milk River, Havre, Mont. (31).	Miles. 237	Feet. 9	Feet.		Feet.		Smoky Hill-Kans. Riv., Con.	Miles. 116	Feet. 18	4.9	20	2.6	15-19	Feet. 2.3		
James River, Huron, S. Dak. (31).	139	9					Manhattan, Kans.	87	21	6.8	20, 21	6.1	1, 16	6.4	0.7	
Big Blue River, Beatrice, Nebr. (10).	92	14	2.8	3	2.3	24-26	2.5	0.5	Topeka, Kans.							
Blue Rapids, Kans. (16).	47	14	3.8	23, 24	3.7	1-14	3.7	0.1	Bismarck, N. Dak. (31).	1, 114	14	3.2	11-13	1.4	1, 31	2.3
Republican River, Clay Center, Kans. (4).	42	18	6.6	2-6	5.2	16, 17	5.9	1.4	Sioux City, Iowa.	784	17	9.5	26, 27, 29, 30	7.0	3	8.4
Solomon River, Beloit, Kans.	75	16	1.7	1, 5	0.6	{ 12, 13, 15,	0.8	1.1	Blair, Nebr.	705	15	11.3	8	8.4	1	9.5
Smoky Hill-Kansas River, Lindsborg, Kans. (31).	341	20	4.6	22	1.5	8, 16	2.0	3.1	Omaha, Nebr. (31).	669	18	—				
Abilene, Kans.	277	22	3.9	21	0.5	1, 2, 14										



## MONTHLY WEATHER REVIEW.

JANUARY, 1907

TABLE VI.—Heights of rivers referred to zeros of gages—Continued.

Stations.	Distance to mouth of river.	Flood stage on gage.	Highest water.		Lowest water.		Mean stage. Monthly range.	Stations.	Distance to mouth of river.	Flood stage on gage.	Highest water.		Lowest water.		Mean stage. Monthly range.	
			Height.	Date.	Height.	Date.					Height.	Date.	Height.	Date.		
Pompton River. Pompton Plains, N. J. ....	6	Feet. 8	Feet. 5.8	1	Feet. 4.3	28-31	Feet. 4.7	Flint River. Woodbury, Ga. ....	227	Feet. 10	Feet. 2.5	1	Feet. 0.8	18, 19, 24, (25, 29, 30)	Feet. 1.1	1.7
Passaic River. Chatham, N. J. (a) ....	69	7	5.5	21	2.9	12	4.2	Montezuma, Ga. ....	152	20	10.0	3	3.0	15, 20	5.1	7.0
Lehigh River. Mauch Chunk, Pa. (1) ....	45	15	7.8	1	5.1	13, 17, 22	5.5	Bainbridge, Ga. ....	90	20	7.8	6	2.2	22, 23	3.7	5.6
Schuylkill River. Reading, Pa. ....	66	12	7.9	1	0.9	31	2.0	Chattohoochee River. Oakdale, Ga. ....	29	22	8.1	7	4.3	21, 23, 24	5.4	3.8
Delaware River. Hancock (E. Branch), N. Y. ....	287	12	8.3	25	3.7	18	5.4	West Point, Ga. ....	305	18	15.0	1	3.8	11, 18, 24	5.1	11.2
Hancock (W. Branch), N. Y. ....	287	10	6.7	1	3.2	25	4.6	Eufaula, Ala. ....	239	20	9.1	1, 2	3.5	24, 25, 29, 30	4.3	5.6
Port Jervis, N. Y. ....	215	14	7.2	1	1.6	30	3.1	Alaga, Ala. ....	90	40	11.5	1	3.6	19	6.3	7.9
Phillipsburg, N. J. (12) ....	146	26	11.6	1	4.3	20	5.9	Gadsden, Ala. ....	162	22	17.9	2	3.5	29-31	6.6	14.4
Trenton, N. J. ....	92	18	8.8	26, 27	2.8	22-24	4.9	Lock No. 4, Ala. ....	113	17	14.4	2	2.8	29, 30	5.6	11.6
North Branch Susquehanna. Binghamton, N. Y. ....	183	16	9.8	5	3.0	18, 23-27, 30	5.0	Wetumpka, Ala. ....	12	45	28.4	3	7.4	30	9.3	21.0
Towanda, Pa. ....	139	16	12.5	1	3.0	26, 27	5.2	Tallapoosa River. Milstead, Ala. ....	42	35	21.1	1	3.0	18, 19	5.5	18.1
Wilkes-Barre, Pa. ....	60	17	15.4	2	6.6	19	10.8	Alabama River. Montgomery, Ala. ....	323	35	26.0	3	4.9	30	10.1	21.1
West Branch Susquehanna. Clearfield, Pa. ....	165	8	5.7	20	1.4	29-31	2.8	Selma, Ala. ....	246	35	28.3	4	6.3	30	12.4	22.0
Renovo, Pa. ....	90	16	10.0	21	2.0	31	5.0	Black Warrior River. Tuscaloosa, Ala. ....	90	43	41.3	1	8.8	30	14.8	32.5
Williamsport, Pa. ....	39	20	11.2	21	3.3	30	6.4	Tombigbee River. Columbus, Miss. ....	316	33	5.5	1, 2	— 0.2	30, 31	2.2	5.7
Juniata River. Huntingdon, Pa. ....	90	24	7.2	15	4.1	31	5.2	Vienna, Ala. ....	246	42	10.9	3	3.0	24-26	5.4	7.9
Susquehanna River. Selinsgrove, Pa. ....	116	17	8.0	2, 22	2.2	31	4.9	Demopolis, Ala. ....	168	35	29.2	4, 5	6.0	30	14.3	23.2
Harrisburg, Pa. ....	69	17	9.9	2	3.1	29, 31	6.3	Leaf River. Hattiesburg, Miss. ....	60	20	8.8	1	3.4	20	5.0	5.4
Shenandoah River. Riverton, Va. ....	58	22	1.6	20	— 0.5	1-13	0.0	Chickasawhay River. Enterprise, Miss. ....	144	18	12.0	2	2.0	29, 30	4.2	10.0
Potomac River. Cumberland, Md. ....	290	8	8.0	19	3.9	7	5.8	Shubuta, Miss. ....	106	25	17.7	4	3.7	25-26	7.0	14.0
Harper's Ferry, W. Va. ....	172	18	12.5	21	2.8	31	6.6	Pascagoula River. Merrill, Miss. ....	78	20	12.1	6	4.3	19	7.1	7.8
James River. Buchanan, Va. ....	305	12	7.5	19	3.2	30, 31	4.6	Pearl River. Jackson, Miss. ....	242	20	10.7	8, 9	3.5	31	6.9	7.2
Lynchburg, Va. ....	260	18	5.3	19	1.6	30, 31	3.0	Columbia, Miss. ....	110	14	10.0	3	6.0	16-19	7.1	4.0
Columbia, Va. ....	167	18	9.9	19	4.9	31	6.8	Sabine River. Logansport, La. ....	315	25	24.0	8	7.0	26	16.5	17.0
Richmond, Va. ....	111	12	2.6	3	0.5	13, 27	1.2	Neches River. Rockland, Tex. ....	105	20	10.3	8	4.9	31	7.0	5.4
Dan River. Danville, Va. ....	55	8	4.4	1	— 0.1	29-31	0.3	Beaumont, Tex. ....	18	10	2.8	18	1.3	27	1.9	1.5
Roanoke River. Clarksville, Va. ....	26	28	8.4	1	5.4	20, 24, 30, 31	5.9	Trinity River. Dallas, Tex. ....	320	25	6.4	6	4.7	2, 28-30	5.2	1.7
Weldon, N. C. ....	196	12	3.5	2	0.5	25	1.2	Long Lake, Tex. ....	211	35	19.5	9	6.9	26	10.5	12.6
Tar River. Tarboro, N. C. ....	129	30	21.2	3	10.4	31	11.5	Riverside, Tex. ....	112	40	24.2	1	3.0	25, 31	6.7	21.2
Greenville, N. C. ....	46	25	4.6	3	2.6	26	3.5	Liberty, Tex. ....	20	25	22.6	3, 4	6.5	24, 27	11.3	16.1
Haw River. Moncure, N. C. ....	21	22	6.5	3	3.8	23	4.8	Brasos River. Kopperl, Tex. ....	345	21	0.4	4-13	0.2	1-3, 14-31	0.3	0.2
Cape Fear River. Fayetteville, N. C. ....	171	25	8.8	2	8.3	12-31	8.4	Waco, Tex. ....	285	24	4.1	4	3.5	22-24, 31	3.7	0.9
Waccamaw River. Conway, S. C. ....	112	38	7.0	3	3.6	25	4.6	Valley Junction, Tex. ....	215	40	0.4	1-3, 23, 25	0.1	11-18	0.3	0.3
Pedee River. Cherry, S. C. ....	40	7	3.2	1, 4	1.6	24, 25, 28, 29	2.4	Hempstead, Tex. ....	140	40	3.9	1	1.1	27	0.3	5.0
Smiths Mills, S. C. ....	149	27	16.1	2	2.6	26, 31	4.3	Booth, Tex. ....	61	39	2.9	12, 25-31	2.6	1	2.8	0.8
Lynch Creek. Efingham, S. C. ....	51	16	11.2	9-11	5.5	27-31	7.8	Colorado River. Ballinger, Tex. ....	489	21	1.0	1-20	0.8	21-31	0.9	0.2
Black River. Broad River.	35	12	6.8	7	4.0	27-29	5.2	Austin, Tex. ....	214	18	1.3	1, 2	0.8	17	1.1	0.5
Catawba-Wateree River. Mount Holly, N. C. ....	171	25	8.8	2	8.3	12-31	8.4	Columbus, Tex. ....	98	24	7.0	3-7, 10, 12	6.4	1, 2	6.8	0.6
Catawba, S. C. ....	107	11	8.0	2	2.0	29, 31	3.0	Guadalupe River. Gonzales, Tex. ....	112	22	0.6	(17, 9-11, 21-31)	0.5	(2-6, 8, 12-25)	0.5	0.1
Camden, S. C. ....	37	24	19.8	2	4.3	28	8.4	Victoria, Tex. ....	53	16	1.7	3	1.2	21, 28	1.4	0.5
Broad River. Blair, S. C. ....	36	14	8.2	2	1.1	31	2.7	Moorhead, Minn. (30) ....	284	26	.....	.....	.....	.....	.....	.....
Saluda River. Pelzer, S. C. ....	109	7	4.5	1-4	3.3	13-19, 21-23	3.7	Snake River. Lewiston, Idaho ....	144	24	5.5	1	2.3	18-29	2.9	3.2
Chappells, S. C. ....	56	14	13.0	3	3.0	16, 25, 30	5.2	Riparia, Wash. ....	67	30	6.0	2, 5	3.0	11, 16, 17, 29	4.0	3.0
Congaree River. Columbia, S. C. ....	52	15	7.5	2	1.0	14, 20, 21	1.9	Columbia River. Wenatchee, Wash. ....	473	40	8.0	29-31	6.0	1, 2	7.0	2.0
Santee River. Rimini, S. C. ....	108	12	13.2	6	7.3	30	9.7	Umatilla, Oreg. (30) ....	270	25	.....	.....	.....	.....	.....	.....
St. Stephens, S. C. ....	50	10	9.0	13	5.3	29	7.4	The Dalles, Oreg. ....	166	40	8.0	1	1.9	16, 30, 31	4.6	6.1
Edisto River. Broad River.	75	6	4.2	2, 5-7	2.5	26-28	3.3	Willamette River. Albany, Oreg. ....	118	20	26.5	6	3.9	23-25	8.0	22.6
Carlton, Ga. ....	30	11	6.7	1	2.5	24-30	3.1	Sacramento River. Red Bluff, Cal. ....	265	23	19.6	4	3.8	22, 23	6.8	15.8
Savannah River. Calhoun Falls, S. C. ....	347	15	3.9	1	2.8	23-25	3.1	Colusa, Cal. ....	156	25	25.1	6	7.4	4	16.4	17.7
Augusta, Ga. ....	268	32	20.6	2	9.0	26	10.3	Knights Landing, Cal. ....	99	....	16.5	11	13.5	25	15.3	3.0
Oconee River. Milledgeville, Ga. ....	147	25	8.0	2	3.2	25	4.0	Sacramento, Cal. ....	64	25	20.6	29	18.2	25, 26	19.4	2.4
Dublin, Ga. ....	79	30	6.5	5	1.1	25	2.5	Rio Vista, Cal. (a) ....	26	12	7.6	18	4.1	22	6.1	3.5
Ocmulgee River. Macon, Ga. ....	203	18	10.8	1	3.0	25, 30	4.1	San Joaquin River. Pollasky, Cal. ....	203	10	4.0	29	0.6	25	1.3	3.4
Abbeville, Ga. ....	96	11	8.8	8	3.8	26, 27	5.4	Firebaugh, Cal. ....	148	....	8.2	30	3.4	4-6	4.3	4.8
							5.0	Lathrop, Cal. ....	49	15	15.0	31	8.8	5	11.6	6.2

(a) One day missing. Figures indicate number of days frozen.

Honolulu, T. H., latitude  $21^{\circ} 19'$  north, longitude  $157^{\circ} 52'$  west; barometer above sea, 33 feet; gravity correction,  $-0.057$  inch, applied. January, 1907.

Day.	Pressure.*		Air temperature.				Moisture.				Wind.				Precipitation.		Clouds.					
	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Maximum.	Minimum.	Wet.	Relative humidity.	Wet.	Relative humidity.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Amount.	Kind.	8 a. m.	8 p. m.		
1	29.89	29.88	69.0	69.0	76	66	68.0	95	68.5	97	s.w.	18	s.	6	0.10	3.46	10	N.	10	N.	s.	
2	29.94	29.93	74.0	73.0	78	69	69.7	81	70.0	86	s.	7	s.e.	3	0.11	T.	9	sw.	0	0	e.	
3	29.96	29.98	74.0	73.5	78	70	71.3	88	68.0	76	e.	7	ne.	3	0.00	0.00	9	s.s.	0	0	0	
4	30.00	29.94	74.4	74.3	81	71	69.6	79	69.0	77	e.	6	e.	8	0.00	0.00	10	Cu.-n.	10	S.	e.	
5	29.91	29.88	75.0	75.0	79	70	69.5	76	71.0	82	e.	4	se.	7	0.00	0.00	7	Ci.-s.	10	S.	se.	
6	29.88	29.87	74.0	75.0	77	68	70.0	82	71.0	82	e.	8	se.	12	0.09	0.05	9	A.-s.	0	0	0	
7	29.88	29.89	72.0	71.5	75	67	70.5	93	68.5	86	s.	15	e.	3	0.04	0.68	10	N.	8	S.	e.	
8	29.92	29.90	70.0	70.5	74	67	67.0	86	68.0	88	ne.	7	ne.	10	0.15	0.01	7	Cu.	10	S.	ne.	
9	29.89	29.90	72.5	71.0	77	67	69.0	84	69.0	90	ne.	4	se.	8	0.01	0.17	7	A.-s.	10	N.	se.	
10	29.89	29.85	71.0	74.0	78	68	68.0	86	71.0	86	n.	4	se.	10	0.14	0.02	10	S.	10	S.	se.	
11	29.88	29.83	71.6	74.0	76	71	70.0	92	73.5	98	e.	13	e.	15	0.12	0.18	10	S.	10	N.	e.	
12	29.89	29.86	74.0	74.2	82	70	70.5	84	73.2	95	se.	8	n.	3	0.15	0.02	10	S.	10	N.	n.	
13	29.94	29.96	72.7	72.5	76	70	70.4	89	72.0	98	ne.	2	e.	3	0.18	0.09	10	S.	10	N.	e.	
14	29.93	29.88	72.0	74.2	75	70	70.0	91	72.2	91	e.	8	s.	8	0.22	0.69	10	S.	5	S.	s.	
15	29.78	29.77	73.5	71.0	75	66	71.2	90	68.0	86	s.	17	ne.	5	0.30	1.67	10	S.	0	0	0	
16	29.84	29.87	72.4	71.2	77	66	70.0	89	68.2	86	ne.	5	ne.	3	0.02	0.00	2	A.-s.	3	Cl.-s.	w.	
17	29.96	30.00	72.0	73.0	78	68	68.0	82	70.0	86	ne.	5	ne.	4	0.00	T.	10	S.	6	S.-eu.	ne.	
18	30.05	30.07	72.5	72.0	80	67	68.0	80	70.0	91	0	0	n.	4	0.00	0.00	few	Cu.	10	S.-eu.	n.	
19	30.07	30.01	72.5	70.0	78	66	68.3	81	67.0	86	0	0	n.	7	0.00	0.00	5	A.-eu.	1	A.-s.	u.	
20	29.99	29.99	71.0	69.5	76	64	67.0	81	67.0	88	0	0	ne.	3	0.00	0.04	5	Ci.	1	Ci.	0	
21	30.00	29.99	71.2	71.0	76	65	67.0	80	66.0	77	ne.	4	ne.	3	0.00	0.00	2	Cu.	9	S.-eu.	ne.	
22	29.98	29.95	71.0	71.5	80	64	65.3	74	67.0	79	ne.	2	e.	1	0.00	0.00	1	A.-s.	0	0	0	
23	29.95	29.88	69.0	74.5	77	67	67.0	90	69.5	78	0	0	sw.	9	0.28	0.00	10	S.	9	Cu.	sw.	
24	29.91	29.93	72.5	72.2	77	66	68.0	80	69.2	86	ne.	4	nw.	2	0.12	0.49	6	S.-eu.	9	S.-eu.	nw.	
25	29.97	29.96	73.0	71.5	79	67	67.0	73	66.0	75	ne.	1	ne.	9	0.00	0.00	0	0	0	0	0	
26	29.98	29.94	73.4	71.0	79	66	65.0	63	64.0	68	ne.	2	ne.	1	0.00	0.00	few	Cu.	few	Cu.	ne.	
27	29.94	29.87	71.0	72.0	78	67	63.0	64	64.0	65	ne.	1	ne.	1	0.00	0.00	9	A.-s.	8	Cu.	ne.	
28	29.84	29.81	66.0	70.2	75	65	64.0	90	67.2	86	e.	9	ne.	1	0.56	T.	8	N.	w.	few	se.	
29	29.81	29.77	71.0	71.0	75	63	64.0	68	66.0	77	ne.	1	e.	3	0.00	0.00	2	A.-s.	1	Cu.	se.	
30	29.75	29.74	72.5	66.0	77	64	67.0	75	63.2	86	s.	15	e.	5	T.	1.22	7	S.-eu.	10	S.	e.	
31	29.78	29.84	74.0	73.0	75	67	69.0	78	71.0	91	s.	17	s.	18	0.03	0.81	10	S.	10	S.	s.	
Mean	29.914	29.901	72.1	72.0	77.2	67.2	68.1	82.1	68.7	84.6	ne.	6.3	ne.	5.7	2.62	9.60	7.0	S.	se.	6.0	S.	ne. e.

Observations are made at 8 a. m. and 8 p. m., local standard time, which is that of  $157^{\circ} 30'$  west, and is 5 $^{\circ}$  and 30' slower than 75th meridian time. \* Pressure values are reduced to sea level and standard gravity.

### RAINFALL IN JAMAICA.

Thru the kindness of Dr. H. H. Cousins, chemist to the government of Jamaica and now in charge of the meteorological service of that island, we have received the following table:

Comparative table of rainfall.  
[Based upon the average stations only.]

DECEMBER, 1906.

Divisions.	Relative area.	Number of stations.	Rainfall.		Per cent.	Inches.	Inches.
			1906.	Average.			
Northeastern division	25	21	5.46	11.19			
Northern division	22	48	2.04	5.95			
West-central division	26	19	0.31	3.60			
Southern division	27	34	0.42	2.89			
Means	100	.....	2.06	5.91			

The rainfall for December was therefore less than half the average for the whole island. The greatest fall, 16.38 inches, occurred at Mount Holstein in the northeastern division,

while no rain fell at Westfield in the northern division and at several other stations in the central, sub west-central, and southern divisions.

JANUARY, 1907.

Divisions.	Relative area.	Number of stations.	Rainfall.	
			1907.	Average.
Northeastern division	25	21	5.41	8.02
Northern division	22	49	2.70	4.11
West-central division	26	19	1.47	2.98
Southern division	27	30	0.73	1.94
Means	100	.....	2.58	4.26

The rainfall for January was therefore considerably below the average for the whole island. The greatest fall, 21.39 inches, occurred at Greenvale in the northeastern division, while no rain fell at Kendal, or Manchester, in the west-central division, also at the Lunatic Asylum and the Public Works Office, Kingston, in the southern division.